

In the Claims

1. - 12. (cancelled)

13. (Currently amended) A vacuum tight coupling for end portions of two tubular sections, a portion of the two tubular sections having an inner space, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on said first end portion, the coupling comprising at least one sealing ring located between an inwardly facing surface of said second end portion and an outwardly facing surface of said first end portion in their a sliding overlapping contact area of the first and second end portions and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of clamping elements, each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, said recess enclosing said flange extremity and said abutment ring, said recess cooperating with the flange extremities to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

14. (Previously presented) A coupling according to claim 13 wherein said flange extremity is a separate ring.

15. (Previously presented) A coupling according to claim 37, wherein the ring halves, besides said bolting means for fixing their extremities in one place comprise

pivoting means for fixing them in their opposite extremities.

16. (Previously presented) A coupling according to claim 13, wherein the first end portion comprises a tubular insert coupled between a tubular section and said second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over said tubular section whereas the opposite insert end is a ring over which said second end portion can slide.
17. (Previously presented) A coupling according to claim 13, wherein the length of the overlap portion between the first and second tube portions is 50% or less of the inner diameter of the first portion.
18. (Previously presented) A coupling according to claim 13, wherein the length of the overlap portion between the first and second end portions is 5% or more of the inner diameter of the first portion.
19. (Previously presented) A coupling according to claim 13, wherein the coupling is an high vacuum or ultra-high vacuum coupling.
20. (Currently amended) A coupling for a cylindrical sputtering target for end portions of two tubular sections, a portion of the two tubular sections having an inner space, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on said first end portion, the coupling comprising at least one sealing ring located between an inwardly facing surface of said second end portion and an outwardly facing surface of said first end portion ~~said end portions in a their sliding overlapping contact area~~ of the first and second end portions and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of clamp elements , each clamp element having a semi-circular or U-

shaped cross section with an inwardly oriented recess, said recess enclosing said flange extremity and said abutment ring, said recess cooperating with the flange extremities to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.

21. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20 wherein said flange extremity is a separate ring.
22. (Previously presented) A coupling for a cylindrical sputtering target according to claim 38, wherein the ring halves, besides said bolting means for fixing their extremities in one place comprise pivoting means for fixing them in their opposite extremities.
23. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the first end position comprises a tubular insert coupled between a tubular section and said second end portion, and wherein the insert end facing the tubular section is a ring which can slide axially over said tubular section whereas the opposite insert end is a ring over which said second end portion can slide.
24. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the length of the overlap portion between the first and second tube portions is 50% or less of the inner diameter of the first portion.
25. (Previously presented) A coupling according to claim 20, wherein the length of the overlap portion between the first and second end portions is 5% or more of the inner diameter of the first portion.

26. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the coupling is an high vacuum or ultra-high vacuum coupling.
27. (Previously presented) The coupling for a cylindrical sputtering target according to claim 20, wherein the fixing means of the clamping ring is located on the side of the coupling remote from the sputtering target.
28. T (Previously presented) he coupling for a cylindrical sputtering target according to claim 20, further comprising an-anti-arcing element.
29. (Previously presented) The coupling for a cylindrical sputtering target according to claim 28, the anti-arcing element being attached to a surface of the clamping ring on the same side as the sputtering target for preventing arcing.
30. (Previously presented) The coupling for a cylindrical sputtering target according to claim 28, wherein the anti-arcing element is conductive or insulating.
31. (Previously presented) The coupling for a cylindrical sputtering target according to claim 28, wherein at least one groove is provided between the anti-arcing element and the clamping ring .
32. (Previously presented) The coupling for a cylindrical sputtering target according to claim 28, wherein the arcing element touches a surface of the sputtering target.
33. (Previously presented) A coupling according to claim 13, wherein the length of the overlap portion between the first and second tube portions is 30% or less of the inner diameter of the first portion.
34. (Previously presented) A coupling according to claim 13, wherein the length of the

overlap portion between the first and second tube portions is 20% or less of the inner diameter of the first portion.

35. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the length of the overlap portion between the first and second tube portions is 30% or less of the inner diameter of the first portion.
36. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the length of the overlap portion between the first and second tube portions is 20% or less of the inner diameter of the first portion.
37. (Previously presented) A coupling according to claim 13, wherein the clamp elements are two substantially equal ring halves.
38. (Previously presented) A coupling for a cylindrical sputtering target according to claim 20, wherein the clamp elements are two substantially equal ring halves.
39. (Previously presented) A coupling according to claim 20, wherein the length of the overlap portion between the first and second tube portions is at least 5% of the inner diameter of the first portion.
40. (Previously presented) A coupling according to claim 13, wherein the length of the overlap portion between the first and second tube portions is at least 5% of the inner diameter of the first portion.
41. (New) A coupling for a rotatable cylindrical sputtering target on a spindle for end portions of two tubular sections, said cylindrical target and said spindle each having one of said tubular sections, a portion of the two tubular sections having an inner space, the size of the inner space of a first end portion being smaller than that of a second end portion, the second end portion having a flange extremity

axially slidable over the first end portion to abut the flange extremity against a peripheral outer abutment ring on said first end portion, the coupling comprising at least one sealing ring located between an inwardly facing surface of said second end portion and an outwardly facing surface of said first end portion in a sliding overlapping contact area of the first and second end portions and further comprising a clamping ring with a substantially cylindrical outer surface and being composed of clamp elements , each clamp element having a semi-circular or U-shaped cross section with an inwardly oriented recess, said recess enclosing said flange extremity and said abutment ring, said recess cooperating with the flange extremities to positively, solidly and axially clamp the abutment ring against the flange extremity, the clamp elements being fixed to each other at their extremities with fixing means comprising in at least one place on the clamping ring bolting means, the axis of which is perpendicular to the longitudinal axis of the coupled tubular sections and substantially tangential to the clamping ring periphery.